

REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

To place the subject application in better form, a new abstract is presented in accordance with preferred practice. No new matter has been added by this change.

Claims 35-43 are presented for consideration in lieu of claims 1-34, which have been canceled without prejudice or disclaimer. Claims 35 and 40 are independent. Support for claims 35-43 can be found in the original application as filed. Therefore, no new matter has been added.

Applicants request favorable reconsideration and withdrawal of the rejection set forth in the above-noted Office Action.

Claims 1, 3, 4 and 6-12 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent 3,398,620 to Gautron. Applicants submit that this patent does not teach many features of the present invention, as previously recited in these claims. Therefore, this rejection is respectfully traversed. Nevertheless, to expedite prosecution, claims 35-43 are now presented in lieu of claims 1, 3, 4 and 6-12. Applicants submit that claims 35-43 amplify the distinctions between the present invention and the cited art.

In one aspect of the invention, independent claim 35 recites a method of producing a semiconductor device constructed by arranging a plurality of substrates, on each of which, thin film semiconductor elements two-dimensionally arranged are installed. The method includes steps of cutting a substrate along at least a slice line provided on the substrate and on a side facing another substrate, which is one of the substrates when the plurality of substrates are

arranged, while detecting a misalignment of a cutting position from the slice line and correcting a cutting position, cutting the substrate of a side opposing the slice line without correcting the cutting position, and adjacently arranging the plurality of substrates on substantially a same plane such that the sides having been cut face each other, while correcting the cutting position of the substrates.

In another aspect of the invention, independent claim 40 recites a method of cutting a substrate of a semiconductor device constructed by adjacently arranging a plurality of substrates on substantially the same plane, on each of the substrates, two-dimensionally arranged thin film semiconductor are installed. The method includes the steps of cutting at least a slice line provided on the substrate and on a side opposing another substrate, which is one of the substrates when the plurality of substrates are arranged, while detecting a misalignment of a cutting position from the slice and correcting a cutting position, cutting the substrate on a side opposing the slice line without correcting the cutting position and electrically checking, after the cutting step is completed, a monitor line provided on a side where the thin film semiconductor elements are installed.

Applicants submit that the cited art does not teach or suggest such features of the present invention, as recited in independent claims 35 and 40.

The Gautron patent discloses that a guiding track including electrically-conductive wire 13 is provided, and cut line D is cut while detecting a detecting electrode. Specifically, that patent discloses a method of cutting a desired side of a substrate. Applicants submit, however, that the Gautron patent does not teach or suggest which side is cut and how a side is cut. Further,

that patent does not teach or suggest that a plurality of cutting methods be applied to one substrate. This is because the Gautron patent does not relate to a technical concept in which a substrate having a large area is made by adjacently arranging a plurality of substrates after the substrates are cut.

Still further, the Gautron patent does not recognize that there are two types of sides, one of which has a problem that when a substrate having a large area is made, cutting precision of a side where another substrate is adjacently arranged, is required, because that cutting precision can cause deterioration in the image due to a gap between adjacent substrates to be bonded, while the other does not require cutting precision, but requires cutting speed. Applicants submit that the Gautron patent is completely silent with respect to which side is adjacently, facingly arranged, after substrates are cut, so as to obtain a desired size.

For the reasons noted above, Applicants submit that the Gautron patent does not teach or suggest the salient features of Applicants' present invention, as recited in independent claim 35.

In addition, Applicants submit that the Gautron patent does not teach or suggest the salient features of Applicants' present invention as recited in independent claim 40, including cutting at least a slice line provided on a substrate and on a side opposing another substrate, which is one of the substrates when the plurality of substrates are arranged, while detecting a misalignment of a cutting position from the slice line and correcting a cutting position, as well as cutting the substrate on a side opposing the slice line without correcting the cutting position and electrically checking, after the cutting step is complete, a monitor line provided on a side where the thin film semiconductor elements are installed.

For the foregoing reasons, Applicants submit that the present invention, as recited in independent claims 35 and 40, is patentably defined over the cited art, whether that art is considered individually or in combination.

Dependent claims 36-39 and 41-43 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. For example, dependent claims 36 and 41 recite that the substrates are fixed on a stage having a groove corresponding to the slice line to cut the substrates. This arrangement improves cutting precision and is not taught or suggested by the Gautron patent. Further, dependent claim 37, as well as independent claim 40, recite that a monitor line is provided on the side where the thin film semiconductor elements are installed, and the monitor line is electrically checked after the cutting step is completed. The Gautron patent does not teach or suggest that a cutting surface be examined after the substrate is cut. Generally speaking, when a plurality of substrates are adjacently arranged, even if one substrate is not cut along the slice line, there is a possibility that a surface to be bonded to the other substrate is destroyed. The present invention recited in claims 37 and 40 avoids this possibility.

For the foregoing reasons, Applicants submit that the present invention, as recited in claims 35-43, is patentably defined over the cited art.

Applicants further submit that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejection set forth in the above-noted Office Action and an early Notice of Allowance are also requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Steven E. Warner", is written over a horizontal line.

Attorney for Applicants

Steven E. Warner

Registration No. 33,326

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200
SEW/eab



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APPENDIX A

IN THE ABSTRACT

[By performing an accurate cutting when a substrate is cut, a gap between the substrate when a plurality of substrates are arranged is made constant or is reduced or eliminated, thereby improving electric characteristics of the gap portion between the substrates. For this purpose, a slice line and a guide line are provided on the substrate, the substrate is cut along the slice line, and the guide line is detected upon cutting, thereby detecting a misalignment and cutting the substrate while correcting the misalignment.]

-- A method of producing a semiconductor device constructed by arranging a plurality of substrates, on each of which, thin film semiconductor elements two-dimensionally arranged are installed. The method includes the steps of cutting a substrate along at least a slice line provided on the substrate and on a side facing another substrate, which is one of the substrates when the plurality of substrates are arranged, while detecting a misalignment of a cutting position from the slice line and correcting a cutting position, cutting the substrate of a side opposing the slice line without correcting the cutting position, and adjacently arranging the plurality of substrates on substantially a same plane such that the sides having been cut face each other, while correcting the cutting position of the substrates. --